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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,099	04/01/2005	Patrice Bujard	SE/2-22794/A/PCT	2615

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PATENT DEPARTMENT
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EXAMINER	
ABU-ALI, SHUANGYI	
ART UNIT	**PAPER NUMBER**
1755	

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/530,099	BUJARD ET AL.	
	Examiner	Art Unit	
	Shuangyi Abu-Ali	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☒ Claim(s) *20 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/18/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

(1)

Claim Objections

Claim 20 is objected to because of the following informalities: "and" occurs twice in the sentence. Appropriate correction is required.

Claim 21 is objected to because of the following informalities: "pigment" occurs twice in the sentence. Appropriate correction is required.

(2)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6 and 9-21 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,569,529 to Phillips et al.

Regarding claims 1,4,6,9,12,15-16 and 20, Phillips et al. disclose that a pigment particle can have the structure as following (Fig. 6): Ti-based absorber--- Dielectric--- Ti-based absorber.

Phillips et al disclose that the Ti-based absorber can be titanium oxide and the thickness of it is in the range of 30- 300 Å (col. 9, lines 2-3). The dielectric core can be silicon substrate, which can be non-stoichiometric material. The ratio of silicon to oxygen can be varied in the range of from 1:1 to 1:2(col. 7, lines 59-65). The dielectric core has two parallel faces (Fig. 6). The thickness of the dielectric core is in the range of 100-800nm (col.7, lines 2-3). Thus the total thickness of the pigment particle of T-based absorber and dielectric core is in the rage of 106-860 nm.

Phillips et al disclose that the particle has a dimension in any surface in the range of 2-200μm (col. 9, lines 49-50). The aspect ratio is at least 2, preferably 5-15(col.16, lines 13-18).

Regarding claims 2,13 and 17-19, Phillips et al. disclose a pigment particle having the following structure (Fig. 8): Dielectric---Reflector---Dielectric.

Phillips et al. disclose that one of the dielectric structures can be silicon substrate, which can be non-stoichiometric material. The ratio of silicon to oxygen can be varied in the range of from 1:1 to 1:2(col. 7, lines 59-65). The dielectric structure has two parallel faces (Fig. 8). The thickness of the dielectric structure is in the range of 100-800 nm (col.7, lines 2-3).

The reflector structure can be made of metallic material such as aluminum, nickel, gold, nickel and the like (col. 6, lines 45-50). The thickness of the reflector structure is in the range of 200-400 Å (col. 6, lines 50-52). The total thickness of the particle with dielectric and reflector structure will be in the range of 220 nm- 1640 nm.

Phillips et al disclose that the particle has a dimension in any surface in the range of 2-200um(col. 9, lines 49-50). The aspect ratio is at least 2, preferably 5-15(col.16, lines 13-18).

Regarding claims 3,5 and 14, Phillip et al. disclose a pigment particle having the following structure (Fig 1): Ti-based absorber—Dielectric---Reflector---Dielectric---Ti-base Absorber.

Phillips et al. disclose that one of the dielectric structures can be silicon substrate, which can be non-stoichiometric material. The ratio of silicon to oxygen can be varied in the range of from 1:1 to 1:2 (col. 7, lines 59-65). The dielectric structure has two parallel faces (Fig. 1). The thickness of the dielectric structure is in the range of 100-800 nm (col. 7, lines 2-3).

The another dielectric structure of thickness of 100-800 nm can be made of low refractive index material, which has index of refraction of 1.65 or less, such as silicon dioxide, aluminum oxide and the like (col. 7, lines 39-48).

Phillips et al disclose that the Ti-based absorber can be titanium oxide and the thickness of it is in the range of 30- 300 Å (col. 9, lines 2-3). The thickness of the reflector structure is in the range of 200-400 Å (col. 6, lines 50-52).

The total thickness of the particle of structure of Ti-based absorber—Dielectric---Reflector---Dielectric---Ti-base Absorber will be in the range of 226 nm-1700 nm.

Phillips et al disclose that the particle has a dimension in any surface in the range of 2-200 um (col. 9, lines 49-50). The aspect ratio is at least 2, preferably 5-15 (col.16, lines 13-18).

Regarding claims 11 and 21, Phillips at al. disclose that the instant invention can be used in cosmetic, ink, coatings, Paints, ceramics and so on (col. 1, lines 15-20).

(3)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any

inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,569,529 to Phillips et al as applied to claim 3 above, and further in view of U.S. Patent No.6, 238,471 to Vogt et al.

Although Phillips et al describe a pigment particle, which has the properties that applicant claim in claim 3, they are silent about using the method claimed by applicant in claim 7 to make it.

However, Vogt et al. disclose a method to make a pigment particle having high and low refractive index metal oxide layers (col. 1, lines 64-67) by suspending substrate in water and adding water soluble high index refractive metal compound in a PH range suitable for hydrolysis and high index refractive metal oxide precipitates onto substrate, followed by adjusting PH and adding low index refractive water soluble metal compound to above mixture to be hydrolyzed and low index refractive metal oxide precipitates on high index metal oxide layer. The product is washed, dried and calcined by need (col.2, lines 5- 21).

It would have been obvious to one of ordinary skill in the art the time of invention to adapt Vogt et al method to deposit metal oxide on silicate flake,

motivated by the fact that Vogt et al. point out that their method is preferred for silicon dioxide platelets (col. 2, lines 61-67).

(4)

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,569,529 to Phillips et al as applied to claim 2 above, and further in view of U.S. Patent No.5, 624,468 to Schmid et al.

Although Phillips et al describe a pigment particle, which has the properties that applicant claim in claim 2, they are silent about using reducing agent to apply layer on silicate flake.

However, Schmid et al. disclose in their invention that more noble metal, such as cooper, gold, silver, cobalt, nickel, palladium and platinum, will be deposited on the pigment if noble metal salt is reduced in the presence of reducing agents, such as glucose and formaldehyde, in wet chemical process (col. 8, lines 6-13).

It would have been obvious to one of ordinary skill in the art the time of invention to adapt Schmid et al method to deposit metal compound on silicate flake, motivated by the fact that more noble material will be deposit on silicate flake (col. 8, lines 8-10).

(5)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Such prior art is listed on PTO-892 A and E.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuangyi Abu-Ali whose telephone number is 571-272-6453. The examiner can normally be reached on Monday - Friday 7:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SA